

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. John A. Smart (Registration # 34,929) on April 16, 2008.

### **AMENDMENTS TO THE CLAIMS**

The application has been amended as follows:

In claim 22, line 1, **DELETE** ~~medium~~, **INSERT** storage medium

**CANCEL** claim 23

In claim 24, line 2, **DELETE** ~~comprising~~, **INSERT** comprising: a computer having at least one processor;

### **REASON FOR ALLOWANCE**

The following is an examiner's statement of reasons for allowance:

The prior art of record, Brown et al. (US Publication 2003/0093408 A1), Lenzie (US Patent 6,728,720 B1), and Zilio et al. (US Patent 7,007,006 B2) teach analogous art to the instant application, that of database optimization utilizing indexes. Brown more specifically teaches an index selection in a database system to make index recommendations based on a workload of queries. However, after careful consideration of the Brief (pages 9-13) filed 2/1/2008, the applicant extensively and specifically pointed out how the claims overcome the prior art of record, particularly the database optimization system does not use virtual indexes to represent entire classes of potential physical indexes, wherein the virtual indexes are utilized for analysis of cost benefits, to recommend database physical indexes. The prior art of Brown teaches that the index recommendation is based on analyzing all of the possible physical indexes and treats each one as a single, individual index. Thus, in the instant application, there is no need for each individual index to be analyzed for cost, as the virtual indexes can be used to analyze groups of physical indexes, based on class.

This feature is indicated in independent claims 1 and 24, wherein the system creates an initial set of virtual indexes each simulating presence of a class of potential database physical indexes that were recorded during said monitoring step, wherein each said virtual index comprises an in-memory data structure corresponding to a set of potential database physical indexes; computing cost benefits for different subsets of the set of virtual indexes by invoking the database optimizer again for purposes of providing cost estimates for the workload for each such subset, progressively eliminating a fixed percentage of virtual indexes with the lowest expected improvement in the query's

estimated cost from consideration until space that would be occupied by the virtual indexes is less than or equal to a user-specified value; and recommending database physical indexes to be created based on those virtual indexes that have favorable estimated cost benefits for the captured workload and have not been eliminated from consideration.. Consequently, independent claims 1 and 24, and dependent claims 3-22, 24, and 26-45 as amended are allowable over prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANGELINO N. GORTAYO whose telephone number is (571)272-7204. The examiner can normally be reached on M-F 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim T. Vo can be reached on (571)272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2168

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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